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GENDER BIAS IN PROMOTION: IS IT REAL?

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Abstract

The present study uses a nationwide longitudinal database to analyze the Portuguese workforce searching for gender differences in promotion. The database presents longitudinal data from employees in eight different professions across the country. The research examines individual dimensions such as age, tenure and education looking for their impact over promotion and possible cumulative gender effects. Results seem to indicate considerable gender dissimilarities regarding promotion rates, consistent with previous literature, but also reports differences, namely by questioning the glass escalator effect, the impact of tenure and the influence of education over promotion. The paper contributes to the body of knowledge on gender issues and career related impacts.

Keywords: Gender studies; Professions; Promotion, Field study

Topic Groups: Gender, diversity and social issues; Human resource management and career development

JEL Classification: M51, J16, M50

INTRODUCTION

Due to relative scarcity of women in top management positions it might be questioned if gender affects progression in firms, so it's appealing to study gender influence in professional promotion (Steinberg, Haignere, Chertos 1990; Lyness and Heilman 2006) and the barriers women have to face along their careers (Lyness and Thompson 2000;

Wellington, Kropft, and Gerkovich 2003). The interest concerning the existence of gender discrimination related to professional promotion has motivated studies in several countries (Judge *et al.* 1995; Stephen 1990; Cobb-Clark and Dunlop 1999; Cabral, Ferber and Green 1981; Lewis 1986; Olson and Becker 1983; Dencker 2008; Metz and Harzing 2009; Hoobler, Wayne and Lemmon 2009). The shorter rate of women progressing in organizations is frequently associated with the occupational segregation in which women usually occupy the lowest management levels at firms, basically being held up to get to higher levels in the hierarchy and better rewarded posts (Adams 2007; Agars 2004, Cassirer and Reskin, 2000; Morrison and von Glinow 1990; Maume 1999; Kirchmeyer 1998; Hymowitz 2004; Lyness and Thompson 2000; Tharenou 1999; Spencer and Stuart 2006). Women who desire to go up in the hierarchy need to adopt a male role model, or following male standardized behaviors, in order to guarantee the possibility to reach an upper level in the organization (Still 1994). Women feel there are barriers holding them from achieving top management levels and as a result being misrepresented in command positions (Maume 2004; Powell & Butterfield 1994). According to Peiss (1998) only in four business sectors women seem to exceed such barrier; the consumer marketing advertising, the cosmetic industry, the small local businesses and the education, being that in the educational area the post of school director tends to be occupied by a woman. The scarcity of gender studies addressing promotion issues in Portugal and the relevancy of the issue in political and entrepreneurial debates present an opportunity to fill in a research gap. In addition, Portugal being a Latin cultural country where traditionally women are not seen as leaders or considered primarily for promotion, serves as an adequate setting for such study. The paper addresses only formal promotion sequences not exploring any type of effect on payment increase related to each promotion.

THEORY

The European and Portuguese Landscape

In 2005 women represented 51.6 percent of the total Portuguese population. In the period from 1998 to 2006 women increased their participation in the work force passing from 51,8 percent to 55,8 percent, while men participation remained around 69 percent (INE 2005). Gender equality in all areas of life is a fundamental right and a value proclaimed by the European Union enshrined in its policy since the Treaty of Rome in 1957. Nevertheless, the European Commission's 2009 Report on Equality between Women and Men (EC 2009 REWM) indicates that the Central Banks of all member states were led by a male governor. The same European Commission's 2007 Report indicated that, on average, the highest decision-making bodies of EU central banks include five men for every woman. At European level, all three of the financial institutions (European Central Bank, European Investment Bank and European Investment Fund) are led by men and women account only for 16 percent of the highest decision-making bodies of these institutions. Given this background, the Portuguese reality in EU regarding women's head of boards is controversial; in a study (Community Labour Force Survey 2007) covering 15 countries none of the Portuguese companies covered in the sample were led by a woman. In the same study, regarding to board membership, women account for less than 5 percent. On the other hand, according to Portuguese domestic statistics (INE 2011), little over half (55,3 percent) of firms have women participating in management jobs and 30,1 percent of management jobs are held by women in Portugal. The same statistics report top management figures, showing that 12 percent of board heads are women. Regarding gender diversity in the Portuguese firms' management teams' composition is as follows: 45 percent are mixed, 45 percent have exclusively male members and 10 percent have exclusively female members. Given such conflicting reports, it

seems critical to further develop research and cumulate evidence in order to fill the gap exposed. The paper addresses the topic of women participating in the work force by exploring the phenomenon of promotion at firms.

Bases of promotion

Promotion stands for an upward hierarchical movement from one position to another, in which the employee ascends to a higher level of responsibility and complexity of duties and obligations receiving as counterpart a more rewarding set of benefits. Promotion involves much more (Seibert, Kraimer & Liden 2001) it also includes a change in the daily work. In the past, women's promotions were not a synonym of increased responsibility and a matching higher hierarchic level as it happened with the men (Stewart and Gudykunst 1982). According to literature, studies presenting similar proportions of both gender promotions show that the raise in responsibility and hierarchic level differs among genders (Eddleston 2004). Extent literature support that women present lower promotion rates (Judge *et al.* 1995; Stephen 1990; Cobb-Clark and Dunlop 1999; Cabral, Ferber and Green 1981; Lewis 1986; Olson and Becker 1983; Dencker 2008; Metz and Harzing 2009; Hoobler, Wayne and Lemmon 2009) than men in similar situations - which means men under the same circumstances and chances are more likely to receive a promotion to progress in the career (Cabral, Ferber and Green 1981; Cannings 1988; Cobb-Clark 2001; McCue 1996; Olson and Becker 1983; Ransom and Oaxaca 2005; Spurr 1990). Although the main trend is strongly sustained in literature, there is also contrary evidence supporting research studies that present men's promotion rate of being lower than women's (Barnett, Baron and Stuart 2000; Gerhart and Milkovich 1989; Spilerman and Petersen 1999; Stewart and Gudykandt 1982). Kaestner (1994) study shows that women in higher levels in the hierarchy have similar and sometimes even superior promotion rates than men, alongside with reports of similar promotion rates among different genders and studies that find no significant differences in men's and women's promotion's rates (Giulano, Levine and Leonard 2005, Hartmann 1987; Lewis 1986; Paulin and Mellor 1996; Powell and Butterfield 1994; Seibert et. 2001; Sheridan, Slocum, Buddha, and Thompson 1990). Carol and Heaton (2003) discloses that the career's development differ between genders; since men receive more internal promotions than women and the latter tend to progress in the career moving to another organization. Considering Lazear and Rosen (1990) studies, men and women receive equal treatment at the work place but preferential treatment is given to men when referring to promotion. Women have lower probabilities of getting a promotion for better rewarded positions when compared to men with similar individual characteristics. Firms prefer to promote men because they assume men will remain in the firm longer than women. In spite of these results little evidence exists regarding gender differences in capabilities and skills (Hind and Baruch 1997). Considering previous literature and the gap regarding Portuguese evidence on promotion, the study addresses visible aspects of the phenomenon at nationwide scale. Thus, the following hypotheses test the gender effect on promotions in Portugal:

Hypothesis 1 – Male promotion rates are similar to female promotion rates

When men do women's work a phenomenon might occur: the Glass Escalator (Williams, 1995) traducing in men consistently being promoted faster over women, even when they are numerically a minority (Budig 2002; Taylor 2010; Williams 1992; 1995). Considering that gender segregation in promotion seams to create different patterns of evolution for men and women (Henson and Rogers 2001; Charles and Grusky 2004) and having present the previous notion about feminine professions (Cassier & Reskin, 2000) the following hypothesis emerge:

Hypothesis 2 – Regarding feminine professions men’s promotion rates are higher than women’s

Some personal effort promotes knowledge, abilities and credibility for those who want to assume top management positions (Tharenou et al. 1994; Spurr 1990; Lyness and Heilman 2006; Metz and Harzing 2009), but evidence seems to suggest that there is a gender bias. Considering literature reports minor top management occupancy levels by women, in spite of women presenting higher education levels than men (Fagenson and Jackson 1994). Melamed (1995) findings support that skill certification benefits more the women’s careers than the men’s. In an opposite way Tharenou et al. (1994) find that skill certification benefits more men’s than women’s careers. Thus, it is hypothesized:

Hypothesis 3: Educational levels have a higher impact on promoted women’s than men’s

Tenure is also considered critical for human capital value enlarging the abilities’ span of individuals (Nordhaug 1993) influencing promotion probabilities. Long term at the firm is seen as a sign of experience, knowledge and productivity (Chase and Aquiliano 1981), being a criterion to consider in the promotion decision making. As firms prefer to promote employees who present greater probability to stay in the firm, it is reasonable that they promote the most tenured. According to Konrad and Cannings (1997) and Kirchmeyer (2002) the effect caused by tenure differs between genders; it contributes positively for career progression in the case of men and negatively for women. Thus a two folded hypothesis arises:

Hypothesis 4a: Tenure impacts positively on men’s promotion

Hypothesis 4b: Tenure impacts negativity on women’s promotion

METHODS

The paper uses a nationwide database (Ministry of the Work and Social Solidarity) that gathers information from all the firms established in Portugal, between the years 2002 to 2005. Participation is mandatory; once a year firms are called to contribute, allowing the Ministry to gather information on employees’ gender; state profession’s classification; tenure status; age; latest promotion date; education. Data analysis was run after it has been cleaned from all its inconsistencies; incomplete registers and registers for which it was not possible to guarantee beyond any doubt its traceability over the period covered by the study. Such procedure resulted in the elimination of over 30.000 registers from the original database when considering the period covered. The study considers a set of 8 professions selected as the ones where gender segregation in promotion is expected to be more visible (Cassirer and Reskin 2000; Morrison and von Gilnow 1990; Maume 1999; Kirchmeyer 1998). Four of the eight professions in the study might be considered as feminine professions - women’s professions according to Wingfield (2009). Professions P22, P23, P24 and P41 that present higher rates of employed women against men, these professions are associated to lower levels of authority (based on span of control analysis) consistent with feminine professions’ profile according to literature.

Table 1: Employee by profession and gender at the beginning of the period (2002)

Professions	Male	Female	Total	%
P11 - Public administration top and middle management	336	194	530	0,40%
P12 - Top Firm Managers	32.213	10.265	42.478	30,40%
P13 - Small firm managers	43.751	17.100	60.851	43,50%
P21 - Exact sciences specialists	6.195	1.892	8.087	5,80%

P 22 - Health specialists	1.448	2.913	4.361	3,10%
P23 - Teachers and professors	1.560	2.647	4.207	3,00%
P24 - Other Sciences specialists	5.280	6.078	11.358	8,10%
P41 - Administrative personnel	1.371	6.631	8.002	5,70%
Total	92.154	47.720	139.874	
Average age (years)	43	40	42	
Average tenure (years)	8	8	8	
School education (years)	10	12	11	

Source: MTSS, 2008

Considering the total 139.874 observations over the period, 34.12 percent respect to women, the total average age of employees is 42 years old. Employees covered in the study have on average 11 years of education at school and an average tenure of 8 years at the beginning of the period covered by the study. For promotion rates see table 2, For promotion each employees has been track throughout the periods studied independently the firm where he or she were working for, and if a change in the rank position was reported a promotion was counted.

Table 2: Employee promotions (2002-2005)

Period	Number of Employees promoted	% Employees promoted	% Male	% Female
2002-2003	17,738	12.7%	63.3%	36.7%
2003-2004	14,997	10.7%	62.3%	37.7%
2004-2005	594	9%	62.1%	37.9%

Source: MTSS, 2008

FINDINGS

When analyzing promotions over the considered period; 2002 to 2003, 2003 to 2004 and 2004 to 2005, results are illustrative (Table 3). Regarding Public administration, top and middle management positions (P11) the equality hypothesis is not rejected over the three periods of promotion considered, meaning it can be assumed to exist no gender bias. Addressing top firm managers (P12), small firm managers (P13) and to exact sciences specialists (P21), in the three periods of promotion considered the equality hypothesis 1 is rejected, meaning it can be assumed to exist gender bias, visible in a highest promotion rate of men over women regarding these jobs. Hypothesis 1 is also rejected when considering health specialists (P22), teachers and professors (P23), other sciences specialists (P24) and administrative personnel (P41), but in this case results show a lower promotion rate of men compared to women, generating a contrary gender bias from (P12; P13; P21). Results lead to the partial rejection of the hypothesis 1 on the majority of professions, apart from Public administration, top and middle management positions (P11) (Table 3).

Table 3: Statistical test results for equality of promotion rates between genders

	Profession	n	Test for gender equality of promotion		Test for men's promotion rates higher than women's		p-value
			p=0,5	p-value	p<k		
Period 2002-2003	P11	76	Not reject	0.135			
	P12	5527	Reject	0	k=0,75	Not reject	0.221
	P13	6221	Reject	0	k=0,72	Not reject	0.293
	P21	1267	Reject	0	k=0,75	Not reject	0.478
	P22	833	Reject	0	k=0,31	Not reject	0.48
	P23	592	Reject	0	k=0,38	Not reject	0.514
	P24	2079	Reject	0	k=0,45	Not reject	0.379
	P41	1143	Reject	0	k=0,17	Not reject	0.398
Period 2003-2004	P11	59	Not reject	0.435			
	P12	4390	Reject	0	k=0,74	Not reject	0.368
	P13	5131	Reject	0	k=0,72	Not reject	0.342
	P21	1088	Reject	0	k=0,74	Not reject	0.437
	P22	714	Reject	0	k=0,29	Not reject	0.419
	P23	514	Reject	0	k=0,39	Not reject	0.429
	P24	2082	Reject	0	k=0,45	Not reject	0.472
	P41	1143	Reject	0	k=0,18	Not reject	0.429
Period 2004-2005	P11	45	Not reject	0.551			
	P12	3557	Reject	0	k=0,74	Not reject	0.341
	P13	4159	Reject	0	k=0,73	Not reject	0.449
	P21	1011	Reject	0	k=0,78	Not reject	0.435
	P22	543	Reject	0	k=0,33	Not reject	0.450
	P23	602	Reject	0	k=0,36	Not reject	0.427
	P24	1728	Reject	0	k=0,45	Not reject	0.498
	P41	948	Reject	0	k=0,19	Not reject	0.516

k – Men's promotion proportion; Sig level < 0.05

According to literature professions P22, P23, P24 and P41 may be considered as feminine professions as data show higher rates of employed women against men and are associated to lower levels of authority. These professions are related to education and health care (Table 3). Regarding hypothesis 2 (on promotion rates difference) statistical results show that over the three periods of promotion considered the hypothesis is rejected, as well as the equality hypothesis, leading to admit a gender bias in favor of women (Table 3). Concerning hypothesis 3 (addressing the impact of education over promotion) a logistic non linear regression model is proposed:

$$Y_i = a + \beta_1 X_{1i} + \xi_i$$

Y_i – (i = 1) Promotion; (i = 0) no promotion

β_1 – estimates of parameters for variables 1

X_{1i} – # education years for subject I

ξ_i – residual value

Table 4: Education effect statistical results

	<i>Period 2002-2003</i>		<i>Period 2003-2004</i>		<i>Period 2004-2005</i>	
	β	<i>p- value</i>	β	<i>p- value</i>	β	<i>p- value</i>
Total promotions	0.038	0	0.052	0	0.062	0
Male promotions	0.033	0	0.046	0	0.055	0
Female promotions	0.044	0	0.060	0	0.073	0

Sig level<.05

Results show that education contributes positively for promotion gender regardless in the three promotion periods considered. However, promoted women's benefit from higher impact of education level than men in all the three promotion periods covered in the study, tenure and age effects controlled. Based on such results hypothesis 3 is not rejected (Table 4). Regarding hypotheses 4a and 4b (questioning the impact of tenure over promotion) a similar logistic non linear model was used, where X_{i_i} represents the tenure of the subject i .

Table 5: Tenure effect statistical results

	<i>Period 2002-2003</i>		<i>Period 2003-2004</i>		<i>Period 2004-2005</i>	
	β	<i>p- value</i>	β	<i>p- value</i>	β	<i>p- value</i>
Total promotions	-0,01	0	-0,005	0	-0,006	0
Male promotions	-0,009	0	-0,004	0	-0,006	0
Female promotions	-0,011	0	-0,005	0	-0,005	0

Sig level<.05

Results show employee's tenure affects marginally and negatively promotion at all promotion periods considered. Both genders' promotions are similarly negatively influenced by tenure. Based on such results hypothesis 4a is rejected and hypothesis 4b is not rejected (Table 5). When controlling for the impact of the employee's age the results show that age affects negatively promotion at all promotion periods considered, gender regardless.

DISCUSSION

The study used a longitudinal (2002-2005) nationwide data base from Portugal covering eight professions was used, half of those respect requisites from literature on being feminine professions. Considering the large scope of the database it's reasonable to accept that

displayed results are expressive. Higher percentage of men in professions like Public administration, top and middle management and top firm managers in the data base is consistent with the literature (Maume 2004; Powell and Butterfield 1994; Aguinis and Adams 1998; Uren 1999). On the other hand, the higher number of women in Health specialists, teachers and professors, other sciences specialists and the administrative personnel follows the proposed concept of feminine professions (Maume 1999; Cassier and Redskin 2000; Equal Opportunities Commission 2002; Wingfield 2009). Rejecting equality of promotion rates among men and women (H:1) in seven out of eight listed professions is in accordance to the main trend sustained in literature, although a Kaestner (1994) reported otherwise. Results concerning profession P11 (Public administration positions) don't reject equality of promotion rates among men and women, possibly due to the equal opportunities policy implemented in Portuguese Public Administration. For the three promotion periods considered the study reports a lower proportion of men's promoted when considering feminine professions (H:2), leading to hypothesis rejection, challenging the Glass Escalator phenomenon (Budig 2002; Taylor, 2010; Williams 1992; 1995). Although the main trend in literature strongly sustains the hypothesis, there is also previous contrary evidence from research studies that present men's promotion rate being lower than women's (Barnett, Baron and Stuart, 2000; Gerhart and Milkovich 1989; Spilerman and Petersen 1999; Stewart and Gudykandt 1982) similar to results achieved in the study. Not rejecting H: 2 seem to be reasonable due to Latin cultural practices where men tend to avoid undertake feminine professions (*e.g.* Ann M. Pescatello 1979). However, caution should apply when analyzing this result since only 19.90 percent of responses in the study come from people working in feminine professions. The study does not reject H:3 on education contribution for promotion for the three periods considered agreeing with human capital theory when arguing that individuals that make large personal investments in skills training and development, will achieve better professional results when compared to other that made less intensive investments (Becker, 1993; Nordhaug 1993; Wayne, Lieden, Kraimer and Graf 1999). Investing in skills and knowledge tends to foster professional progression (Judge et al. 1995; Kirchmeyer 1998; Melamed 1995) attracting better job proposals and greater probability of achieving success (Gattiker and Larwood 1990; Judge et al. 1995; Cox and Harquail 1991; Melamed 1996). Evidence from the study seems to suggest that there is a gender bias, promoted women seems to benefit from higher impact of education level on promotion than men, similar to skill certification impact effect found by Melamed (1995). When addressing employee's tenure, evidence identifies a marginal and negative effect on promotion at all periods considered, no gender bias was found (H:4a and H:4b), both men and women's promotions are similarly negatively influenced by tenure. The tenure effect on promotion found is minimal, questioning previous research (Chase and Aquiliano 1981; Nordhaug 1993) and does not reveal gender bias, contradicting the works of Konrad and Cannings (1997) and Kirchmeyer (2002). Considering results found when addressing men's tenure impact on promotion, it does not impact positively (H: 4a) refuting the literature (Konrad and Cannings 1997; Kirchmeyer 2002). Regarding women's promotion evidence, the study is consistent with previous reported results where tenure contributes negatively for career progression (H:4b) (Konrad and Cannings 1997; Kirchmeyer 2002). Evidence on this study may suffer the influence of demographic data; low average employee's age (42 years – in the first half of their working lives) and consequently low average tenure (8 years).

CONCLUSIONS AND IMPLICATIONS

The study explored differences in promotion rates between men and women and the contribution of several variables to the attainment of promotion. Main results follow the

literature and comfort authors regarding the suitability of the sample for the study's purposes. Results questioning previous works may be explained by particular cultural setting. Regarding equality of promotion rates tested, Portuguese evidence observes general literature trend and rejects its existence in the majority of professions in the study. Results regarding the age effect are consistent with literature, although tested in a specific cultural setting and using a nationwide data set. Considering the education level impact over promotions, there is a difference between genders, as extensively found in previous research. Within educational impact analysis, women's education level creates a higher contribution on promotion rates than men's, presenting a result not often reported in literature. Although the existing literature points out different results with respect to tenure as a synonym of experience, the study shows that tenure has a negative effect over promotion in both genders, presenting a stronger impact when considering women, thus Portuguese evidence doesn't denote a gender bias respecting tenure effect. Considering the Glass Escalator effect is not unanimous in literature, the Portuguese reality adds to the trend rejecting its existence. Results show age affects negatively promotion at all promotion periods considered, gender regardless. Contributions in the study are strongly supported by the use of a nationwide database, covering several years, across different activity sectors and addressing several audiences (public and private) in a specific cultural setting. Concerning practitioners the study results suggests for changes in promotion practices in order to remove the gender bias in promotion rates. Another important issue that may concern the practitioners is the facts that women are on average more educated, younger, and they are slowly taking the lead in top key jobs, therefore as the time goes by they will naturally substitute their male counterparts. So the quest to prepare the next generation of women to take control relies on preparation and proactiveness to guarantee organizational sustainability. Regarding governmental policies, the study endorses the need for a better and more rational use of public expenditures on education considering its impact on career progression. To Academia, a major contribution of the study is indeed the richness added to literature on gender and career stream. The strength of results comes from the use of a large and reliable Nationwide database, providing a longitudinal approach to promotion issues in a specific Latin European country. The fact that it was not possible to identify individual and organizational motivations for promotion constitutes a limitation to the study. Not knowing the real cause for promotion inhibits a more accurate conclusion. Another constraint comes from the nature of the database, being a governmental State database imposes a limitation on the amount of the data assessed, namely on the scope of professions that could be used in the study. Also by not knowing the type of increase on responsibility or payment related to each promotion move constitutes a limitation to the study. Concerning future studies, an invitation to researchers to complement the study is left for upcoming research to overcome the limitations presented. The effect of family dimension and composition of employees should also be explored by subsequent research to address their influence over promotion. Exploring family biographic relation to promotion events, considering variables as the existence and number of children or the marriage status, will clearly expand present findings.

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